



AD _____

GRANT NO: DAMD17-94-J-4429

TITLE: Measurements of Dioxin: PCB and Organochlorine Levels in Breast Adipose Tissue From Women With and Without Breast Cancer

PRINCIPAL INVESTIGATOR(S): Doctor Myrto Petreas

CONTRACTING ORGANIZATION: California Public Health Foundation
Berkeley, California 94704

REPORT DATE: September 1995

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

19951107 015

DTIC QUALITY INSPECTED 5

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 1995	3. REPORT TYPE AND DATES COVERED Annual 1 Sep 94 - 31 Aug 95	
4. TITLE AND SUBTITLE Measurements of Dioxin: PCB and Organochlorine Levels in Breast Adipose Tissue from Women With and Without Breast Cancer			5. FUNDING NUMBERS DAMD17-94-J-4429	
6. AUTHOR(S) Dr. Myrto Petreas				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) California Public Health Foundation Berkeley, California 94704			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The aim of the study is to elucidate the associations between breast cancer and the presence of organochlorine pesticides and specific PCB and PCDD/PCDF congeners in adipose tissue of women undergoing breast surgery. The target chemicals have demonstrated carcinogenic or estrogenic/anti-estrogenic potency. The study subjects are being recruited from among women undergoing open surgical biopsy, lumpectomy, or mastectomy at Stanford University Hospital. Pre-operatively, patients are interviewed regarding dietary and environmental exposures, medical and reproductive history and demographics. For the purpose of this study, cases are defined as women with definitive breast malignancies, and controls as women classified with benign histologic changes. To minimize misclassification, women with atypical hyperplasia, lobular carcinoma in situ, and any previous cancer diagnoses, as well as women taking tamoxifen are excluded. Controls will be matched to cases by five year age intervals. A questionnaire was developed and tested in a pilot phase. A total of 12 patients have been recruited out of the total 100 to be accessioned into the study. Questionnaires have been extracted and specimens are ready for chemical analysis. The study is proceeding slowly during the maternity leave of our surgeon. The pace will accelerate upon her return.				
14. SUBJECT TERMS Case-control study, xenobiotics, estrogenic activity, dioxins, PCBs, pesticides, breast adipose tissue			15. NUMBER OF PAGES 62	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	

GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to **stay within the lines** to meet **optical scanning requirements**.

Block 1. Agency Use Only (Leave blank).

Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C - Contract	PR - Project
G - Grant	TA - Task
PE - Program Element	WU - Work Unit Accession No.

Block 6. Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Report Number. (If known)

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in.... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. Distribution/Availability Statement. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

DOD - See DoDD 5230.24, "Distribution Statements on Technical Documents."

DOE - See authorities.

NASA - See Handbook NHB 2200.2.

NTIS - Leave blank.

Block 12b. Distribution Code.

DOD - Leave blank.

DOE - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.

NASA - Leave blank.

NTIS - Leave blank.

Block 13. Abstract. Include a brief (*Maximum 200 words*) factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code (*NTIS only*).

Blocks 17. - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the US Army.

NA Where copyrighted material is quoted, permission has been obtained to use such material.

NA Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

X Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

NA In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Resources, National Research Council (NIH Publication No. 86-23, Revised 1985).

X For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

NA In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

NA In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

NA In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories. ...

NA = Not applicable

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution /	
Availability Codes	
Dist. 1	Avail and/or Special

PI - Signature

Date

9/25/95

TABLE OF CONTENTS

1	FRONT COVER (as provided)1
2	SF 298 REPORT DOCUMENTATION PAGE	2
3	FOREWORD.3
4	TABLE OF CONTENTS.	4
5	INTRODUCTION	5
	BACKGROUND	5
	APPROACH	6
	HYPOTHESIS/PURPOSE	7
	TECHNICAL OBJECTIVES	7
6	METHODS	8
	QUESTIONNAIRES	8
	SAMPLE HANDLING	9
	HISTOPATHOLOGY	9
	DATA TRACKING	9
	TIMELINE	10
7	CONCLUSIONS	10
8	REFERENCES	11
9	APPENDICES	14
	Appendix 1 Target chemical compounds	
	Organochlorine pesticides (Table A)	
	Dioxins and furans (Table B)	
	Congener-specific PCBs (Table C)	
	Appendix 2 Questionnaires	
	Dietary Questionnaire	
	Breast Cancer Study Questionnaire	
	Appendix 3 Copy of letter to DOD requesting a no-cost	
	extension	
	Appendix 4 Budget expenditures	

5 INTRODUCTION

BACKGROUND

In the US, breast cancer is the most common cancer in women and the leading cause of death in women between the ages of 40 and 55 ⁽¹⁾. All known risk factors, however, are estimated to account for fewer than 30% of breast cancer cases ⁽²⁾. Incidence rates have increased at a rate of 4% per year between 1982 and 1986 ⁽³⁾. Although this increase is thought to be mainly due to earlier detection as a result of enhanced screening ⁽⁴⁾, part of the increase may be due to environmental factors. Extensive use of organochlorine pesticides and industrial chemicals in the first decades after WWII and the bioconcentration potential of these compounds in the food chain and in human tissues ⁽⁵⁾ may have placed a cohort of men and women at a high risk of exposure. As these women approach menopausal age, a well documented risk factor ⁽⁶⁾, their body burden of these chemicals may place them at an even higher risk for developing breast cancer. A number of recent studies ^(7,8,9,10,11) have explored links between breast cancer and the presence of certain of these chemicals in humans. These studies vary in terms of sample size, matrix analyzed (serum vs. adipose), selection criteria and confounder adjustments. In the more recent, and better designed studies, positive associations were found for beta-HCH ⁽⁹⁾, DDE ^(10,11), DDT ⁽¹⁰⁾ and PCB 1260 ⁽¹⁰⁾. The inconsistency in these findings is noteworthy; DDE was the only chemical positively identified in more than one study. We believe that, in addition to differences in the design of the above studies (selection of cases and controls, covariates, statistical power), the selection of chemicals for analysis may have contributed to the inconsistent and conflicting results. A careful selection of chemical compounds which may be associated with the development of breast cancer is essential in the design of a study focussing on environmental risk factors.

The critical role of sex hormones in the development of breast cancer is well accepted ^(12,13,14). Experimental evidence indicates two mutually exclusive pathways in the metabolism of estradiol. One pathway leads to the formation of 2-hydroxyestrone (2-OH-E), a non genotoxic metabolite with minimal estrogenic activity. The second pathway leads to the formation of 16-alpha hydroxyestrone (16a-OH-E) a genotoxic metabolite with high estrogenic activity ⁽¹⁵⁾. It has been proposed that exogenous compounds may activate or inhibit each of these pathways ⁽¹⁶⁾. Increases in the ratio of 16a-OH-E to 2-OH-E have been linked to breast cancer, while decreases appear protective. As an example, indole-3-carbinol, an ingredient of cruciferous vegetables decreases this ratio and also decreases the incidence of mammary tumors ⁽¹⁷⁾. On the other hand, a number of

chlorinated organic compounds, PAHs and pharmaceuticals are thought to increase the ratio of 16a-OH-E to 2-OH-E ⁽¹⁶⁾, or even act as direct estrogens. The direct estrogenic potential of some of the DDT analogs is well documented ^(18,19,20). There is also experimental evidence on the estrogenic properties of other chlorinated pesticides such as Methoxychlor ⁽²⁰⁾, Beta-HCH ⁽²¹⁾, Heptachlor ⁽²²⁾, Chlordane ⁽²²⁾ and Kepone ^(22,23,24). It would be desirable, therefore, to include such chemicals, as well as their metabolites (e.g., oxychlordane, heptachlor epoxide, etc.) and chemicals with similar structure (e.g. Mirex as a structural analog of Kepone) in a study of xenobiotics and breast cancer.

It is well known ⁽²⁵⁾ that specific congeners of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans (PCDD/PCDFs) and Polychlorinated Biphenyls (PCBs) have significantly different potency in inducing diverse enzymes, modulating hormone receptor-binding activities, altering levels of thyroid hormone and vitamin A, and resulting in immunotoxicity, teratogenicity, hepatotoxicity, cancer and acute toxicity in various cell systems and animals. Of the over two hundred dioxin and furan congeners, seventeen are chlorinated in the 2,3,7,8 positions. The most extensively studied congener of this group is 2,3,7,8 tetra dioxin (TCDD). All seventeen congeners have a planar structure, exhibit the highest affinity for the Ah receptor ⁽²⁵⁾ and bioaccumulate in human tissues ⁽²⁶⁾. Of the 209 Polychlorinated Biphenyls (PCBs), those substituted on both para- and at least two meta- positions are approximate isostereomers of 2,3,7,8 TCDD and exhibit high affinity for the Ah receptor ⁽²⁵⁾. Additionally, mono-ortho coplanar congeners exhibit affinity for the Ah receptor, but at a lower level. Recently, the anti-estrogenic potential of a number of these PCDD/PCDF and PCB congeners has been shown ^(27,28,29,30). In general, their order of potency paralleled their binding affinities for the Ah receptor ⁽³⁰⁾. Unless these specific congeners are measured and controlled for in the analysis, exposures may be misclassified and associations missed.

APPROACH

We decided to examine the value of analysing breast adipose tissue for a wide range of chemical compounds that have the following properties:

1. They are lipophilic with long half-lives in human adipose tissue resulting in bioaccumulation, and
2. There is evidence for their carcinogenicity and/or their estrogenic or anti-estrogenic potential.

The selected chemical compounds (target analytes) are listed in Tables A, B, and C. We have developed appropriate chemical methods

for the analysis of these target analytes (Tables A, B, and C).

HYPOTHESIS/PURPOSE

The purpose of the study is to drastically expand and refine the panel of chemical compounds which have been suspected of an association with breast cancer. Target compounds include specific congeners of PCBs (rather than total PCBs), PCDDs/PCDFs and chlorinated pesticides with demonstrated carcinogenic or estrogenic/anti-estrogenic potency.

The hypothesis to be tested can be formulated as follows:

Ho: For each chemical compound in Tables A, B and C, there is no statistically significant difference in its concentration in breast adipose tissue of cases and matched controls.

TECHNICAL OBJECTIVES

The aim of the study is to elucidate the associations between breast cancer and the presence of organochlorine pesticides and specific PCB and PCDD/PCDF congeners in adipose tissue of women undergoing breast surgery.

The specific objectives of the study are:

1. To recruit, screen and select women for participation in the study.
2. To administer a questionnaire on medical and reproductive history, dietary habits and other health behaviors, environmental exposures, demographics and socioeconomic status.
3. To obtain samples of breast adipose tissue during surgery.
4. To analyze the adipose samples for a panel of chemicals.
5. To determine any correlations between chemicals measured in tissues of cases and controls. This would allow us to a) control for highly correlated measurements in a multivariate analysis of the data, and b) identify chemicals which can be used as surrogates for others, therefore reducing the number of analytes that would need to be measured in future studies.
6. To use multivariate logistic regression to calculate exposure-specific odds ratios while controlling for other risk factors, including other chemical compounds.

6 METHODS

STUDY POPULATION

The study subjects are being recruited from among women undergoing open surgical biopsy, lumpectomy, or mastectomy at Stanford University Hospital. Stanford is a referral hospital drawing patients from a wide area in Northern California. While the target population is not representative of the general population of the State, it is representative of women at highest risk for breast cancer: predominately white and of higher socioeconomic status. The demographic and clinical profiles of study subjects will be compared to those for Stanford Hospital in general and, for breast cancer cases, to those reported via the population-based surveillance system covering the greater San Francisco Bay Area.

For the purpose of this study, cases are defined as women with definitive breast malignancies, and controls as women classified with benign histologic changes. Because of the strong association between atypical hyperplasia and subsequent breast cancer, women with atypical hyperplasia are excluded from the control group. Women with lobular carcinoma in situ are also excluded as this is thought to be a tumor marker for elevated risk for development of future breast cancer in either breast. Also excluded from both the case and control groups are women with previous cancer diagnoses and women taking tamoxifen. Controls will be matched to cases by five year age intervals. A total of 50 pairs will be accessioned into the study.

All study-eligible women are asked to sign a consent form and also to sign a medical release for access to medical records information, including the pathology report and associated diagnostic data. They are then asked to participate in an epidemiologic interview prior to surgery.

QUESTIONNAIRES

The epidemiologic interview is designed to include two phases:

1. Completion of a Dietary Questionnaire. The dietary instrument is Gladys Block's short (60-item) inventory (Appendix). The instrument has been used in a variety of cancer epidemiology studies by the California Department of Health Services, and serves well to estimate relative consumption of many dietary constituents, including total percent calories from fat.
2. Breast Cancer Study Questionnaire (Appendix). The in-person interview solicits information on medical and reproductive history, family history, environmental exposures, health

habits, and demographic characteristics.

Whereas the Dietary Questionnaire is used without any modifications, the Breast Cancer Study Questionnaire was developed specifically for this study. The instrument was field tested on 15 women in the pilot phase of this study, repeatedly modified and further refined to its current final form. All study participants have been interviewed with the final form of the questionnaire. The same instrument will be used with all future participants. Both the Dietary and the Breast Cancer questionnaires have the patient's medical record number as the sole identifier to ensure confidentiality during data review and coding.

SAMPLE HANDLING

In women undergoing surgical breast biopsy or wide local excision (lumpectomy or tylectomy), about 2 grams of breast adipose tissue are obtained from beyond the edges of the biopsy or excision cavity. For women undergoing mastectomy, similar amounts of breast adipose tissue are obtained from a site distant from the tumor in order to not interfere with pathologic analysis. The removed adipose tissue is immediately placed in chemically clean glass jars with teflon-lined screw caps. The jars are labeled with the medical record of the patient, with no other identifiers to ensure confidentiality and unbiased chemical analysis. Samples are frozen to below -20 C° and transported to the Hazardous Materials Laboratory (HML) for analysis.

HISTOPATHOLOGY

Histologic sections of all breast lesions are evaluated by the Stanford University Department of Pathology. Diagnoses are coded as invasive malignant disease, non-invasive malignant disease, or benign histologic changes. Patients with breast disease classified as atypical hyperplasia or lobular carcinoma in situ are excluded from the analysis.

A copy of the pathology report is reviewed for the definitive diagnosis and, for the cancer cases, additional tumor information is extracted including TNM staging; cell type; tumor size; histologic grading determined by nuclear atypia, mitotic activity, and tubule formation; and angiolymphatic perineural invasion. For invasive tumors only, presence of axillary lymph node metastases; estrogen and progesterone receptor status; and possible DNA flow cytometry and S-phase fraction analysis is obtained.

DATA TRACKING

All completed questionnaires, medical records and pathology reports

are kept by the PI in a secure filing cabinet. Pertinent information is extracted, coded and entered in a computerized data base specifically designed for the study. The patient's medical record number is the sole identifier in this data base. At the completion of the study, this data base will be merged with the data base of chemical analysis results and the combined data base will be subjected to statistical analysis.

A listing of all specimens archived in the laboratory freezer is also kept by the PI. Specimens are identified by the patients' medical record numbers.

TIMELINE

During the first quarter (Sept-December 1994) a number of organizational actions were taken, such as hiring and training the field personnel, as well as developing, field testing and refining the Breast Cancer Questionnaire as part of a pilot/training phase. The study started formally in January 1995, with the recruitment, interview and surgical procedures of the first five eligible patients. In February 1995, our surgeon (Dr. Jeffrey) went on maternity leave and the pace of the study slowed significantly, with only seven additional patients included in the study in the period between February and September. Dr. Jeffrey will resume her full time duties at the end of the year. (Under separate cover we are requesting a one-year, no-cost extension of the project).

All pertinent information (questionnaires, medical records) has been extracted and entered into the data base and the specimens are archived in the laboratory freezer. As soon as the patient pool increases, selected cases and controls will be matched and their specimens will be submitted for chemical analysis.

Accordingly, only salaries for field personnel have been expended during the first year. Expenses for laboratory analyses (chemist's salary, laboratory supplies, instrument maintenance and repair), as well as travel expenses, have not been incurred (Appendix). We anticipate such expenses in the second year of the study.

7 CONCLUSIONS

The main points of the work completed so far can be summarized below:

A custom made questionnaire was developed to assess environmental risk factors, in addition to the risk factors associated with diet, reproductive and medical history and demographics. That questionnaire was field tested in a pilot phase and finalized for use in the study.

Recruitment, interviewing and specimen collection from patients is successfully accomplished by field personnel. However, the unexpected extension of Dr. Jeffrey's maternity leave has slowed the progress of the study, with only 12 of the necessary 100 subjects enrolled. Upon her return, the study will resume at the expected pace and no changes in the methodology seem necessary. A no-cost extension is being requested to complete the work.

8 REFERENCES

1. National Center for Health Statistics. Vital statistics of the United States, 1987. Vol. 2. Mortality. Part A. Washington, DC: Government Printing Office, 1990
2. Seidman H, Stellman SD, Mushinski MH. A different perspective on breast cancer risk factors: some implications for non-attributable risk. New York, American Cancer Society Professional Publication, 1983
3. Miller BA, Feuer EJ, Hankey BF. The increasing incidence of breast cancer since 1982: relevance of early detection. *Cancer Causes Control* 2:67-74, 1991
4. White E, Lee CY, Kristal AR: Evaluation of the increase in breast cancer incidence in relation to mammography use. *J Natl Cancer Inst* 82:1546-1552, 1990
5. Kutz FW, Wood PH, Bottimore DP. Organochlorine Pesticides and Polychlorinated Biphenyls in Human Adipose Tissue in Reviews of Environmental Contamination and Toxicology, GW Ware, Ed, Volume 120, 1991
6. Kelsey JL. Breast cancer epidemiology: summary and future directions. *Epidemiologic Reviews* 15:256-263, 1993
7. Wasserman M, Nogueira DP, Tomatis L, et al. Organochlorine compounds in neoplastic and adjacent apparently normal breast tissue. *Bull Environ Contam Toxicol* 15:478-84, 1976
8. Unger M, Kiaer H, Blichett-Toft M, Olsen J, Clausen J. Organochlorine compounds in human breast fat from deceased with and without breast cancer and in a biopsy material from newly diagnosed patients undergoing breast surgery. *Environ Res* 34:24-28, 1984
9. Mussalo-Rauhamaa H, Hasanen E, Pyysalo H, Kauppila AR, Pantzar P. Occurrence of Beta-Hexachlorocyclohexane in Breast Cancer Patients. *Cancer* 66:2124-2128, 1990

10. Falck F Jr, Ricci A Jr, Wolff MS, et al. Pesticides and polychlorinated biphenyl residues in human breast lipids and their relation to breast cancer. Arch Envir Hlth 47:143-146, 1992
11. Wolff MS, Toniolo PG, Lee EW, Rivera M, Dubin N. Blood levels of organochlorine residues and risk of breast cancer. J Natl Cancer inst 85:648-652, 1993
12. Key TJ, Pike MC. The role of estrogens and progestogens in the epidemiology and prevention of breast cancer. Eur J Cancer Clin Oncol 24(1):29-43, 1988
13. Harris JR, Lippman ME, et al. Breast Cancer. N Engl J Med 327:319-328, 1992
14. Henderson BE, Ross RK, Pike MC. Hormonal chemoprevention of cancer in women. Science 259:633-638, 1993
15. Telang N, Suto A, et al. Induction by estrogen metabolite 16a-hydroxyestrone of genotoxic damage and aberrant proliferation in mouse mammary epithelial cells. JNCI 84:634, 1992
16. Davis DL, Bradlow HL, Wolff M, et al. Medical Hypothesis: Xenoestrogens as Preventable Causes of Breast Cancer. Environ Health Perspect 101:372-377, 1993
17. Bradlow HL, Michnovioz JJ, Telang NT, et al. Diet, oncogenes and tumor viruses as modulators of estrogen metabolism in vivo and in vitro. Cancer Prev Detect S16:35-42, 1991
18. Nelson JA, Struck RF, James R. Estrogenic activities of chlorinated hydrocarbons. Toxicology and Environmental Health 4:325-339, 1978
19. Robison AK, Mukku VR, Spalding DM, Stancel GM. The Estrogenic Activity of DDT: The in Vitro Induction of an Estrogen-Inducible Protein by o,p'-DDT. Toxicol and Appl Pharmacol 76, 537-543, 1984
20. Johnson D, Sen M, Dey S. Differential effects of DDT analogs, chlordecone and 2,3,7,8-TCDD on establishment of pregnancy in hypophysectomized rat. Pro Soc Exp Biol Med 199:42-48, 1992
21. Coosen R, Velsen V. FL Effects of the beta-isomer of hexachlorocyclohexane on estrogen-sensitive human mammary tumor cells. Toxicol Appl Pharmacol 101:310-318, 1989
22. Soto AM, Lin TM, Justicia H, et al. An "in culture" bioassay to access the estrogenicity of xenobiotics (E-screen). In: Chemically induced alterations in sexual and functional

development: the wildlife/human connection (Colborn T, Clement C, eds). Princeton Scientific Publishing, 21:295-309, 1992

23. Palmiter RD, Mulvihill ER. Estrogenic activity of the insecticide kepone on the chicken oviduct. *Science* 201:28, 1978

24. Eroschenko VP. Estrogenic activity of the insecticide chlordecone in the reproductive tract of birds and mammals. *Toxicology and Environmental Health* 8:731-742, 1981

25. Safe S. PCBs, PCDDs, PCDFs, and Related Compounds: Environmental and Mechanistic Considerations Which Support the Development of Toxic Equivalency Factors (TEFs). *Critical Reviews in Toxicology* 21(1):51-88, 1990

26. Rappe C, Andersson R, Bergquist PA, et al. Overview on environmental fate of chlorinated dioxins and dibenzofurans. Sources, levels, and isomeric pattern in various matrices. *Chemosphere* 16:1603, 1987

27. Gallo MA, Hesse EJ, Macdonald GJ, Umbreit TH. Interactive effects of estradiol and 2,3,7,8-TCDD on hepatic cytochrome P-450 and mouse uterus. *Toxicol Let.* 32:123-132, 1986

28. Romkes M, Safe S. Comparative activities of 2,3,7,8-TCDD and progesterone on antiestrogens in the female rat uterus. *Toxicol Appl Pharmacol.* 92:368-380, 1988

29. Safe S. ED: Environmental Toxin Series 1. Polychlorinated Biphenyls (PCBs): Mammalian and Environmental Toxicology. New York: Springer-Verlag, 1987

30. Krishnan V, Safe S. PCBs, PCDDs, and PCDFs as Antiestrogens in MCF-7 Human Breast Cancer Cells: Quantitative Structure-Activity Relationships. *Tox Appl Pharmac.* 120, 55-61, 1993

9 APPENDICES

- Appendix 1 Target chemical compounds
 Organochlorine pesticides (Table A)
 Dioxins and furans (Table B)
 Congener-specific PCBs (Table C)
- Appendix 2 Questionnaires
 Dietary Questionnaire
 Breast Cancer Study Questionnaire
- Appendix 3 Copy of letter to DOD requesting a no-cost
 extension
- Appendix 4 Budget expenditures

Appendix 1 Target chemical compounds
 Organochlorine pesticides (Table A)
 Dioxins and furans (Table B)
 Congener-specific PCBs (Table C)

Tables Of Selected Chemical Compounds Targeted For Analysis

TABLE A. ORGANOCHLORINE COMPOUNDS TARGETED FOR ANALYSIS

Common Name	CAS Registry	Molecular Formula	Chemical Name
DDT (o,p')	789-02-6	C ₁₄ H ₉ Cl ₅	1-(o-chlorophenyl)-1-(p-chlorophenyl)-2,2,2-trichloroethane
DDT(p,p')	50-29-3	C ₁₄ H ₉ Cl ₅	1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; 1,1-bis(4-chlorophenyl)-2,2,2-trichloroethane
DDE(o,p')	3424082-6	C ₁₄ H ₈ Cl ₄	1-(o-chlorophenyl)-1-(p-chlorophenyl)-2,2-dichloroethylene
DDE(p,p')	72-55-9	C ₁₄ H ₈ Cl ₄	2,2-bis-(p-chlorophenyl)-1,1-dichloroethylene
Methoxychlor	72-43-5	C ₁₆ H ₁₅ Cl ₃ O	1,1,1-trichloro-2,2bis(4-chlorophenyl)ethane
HCB	118-74-1	C ₆ Cl ₆	Hexachlorobenzene
α-BHC	319-84-6	C ₆ H ₆ Cl ₆	α-1,2,3,4,5,6-Hexachlorocyclohexane
β-BHC	319-85-7	C ₆ H ₆ Cl ₆	β-1,2,3,4,5,6-Hexachlorocyclohexane
γ-BHC	58-89-9	C ₆ H ₆ Cl ₆	γ-1,2,3,4,5,6-Hexachlorocyclohexane
α-Chlordane	5103-71-9	C ₁₀ H ₆ Cl ₈	1-exo,2-exo,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene
β-Chlordane	5103-74-2	C ₁₀ H ₆ Cl ₈	1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene
γ-Chlordane	5564-34-7	C ₁₀ H ₆ Cl ₈	1-exo,2-endo,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene
Oxychlorodane	26880-48-8	C ₁₀ H ₄ Cl ₈ O	1-exo,2-endo-4,5,6,7,8,8-octachloro-2,3-exo-epoxy-2,3,3a,4,7,7a-hexahydro-4,7methanoindene
trans-Nonachlor	39765-80-5	C ₁₀ H ₅ Cl ₉	1-exo,2-endo,-3-exo,4,5,6,7,8-Nonachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane
Heptachlor	76-44-8	C ₁₀ H ₅ Cl ₇	1,4,5,6,7,8,8-Heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindane
Heptachlor epoxide	1024-57-3	C ₁₀ H ₅ Cl ₇ O	1,4,5,6,7,8,8-Heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindane
Chlorodecone	143-50-0	C ₁₀ Cl ₁₀ O	1,2,3,4,5,5,6,7,8,9,10,10-Dodecachlorooctahydro-1,3-4-metheno-2-cyclobuta-[c,d]-pentalone
Mirex	2385-85-5	C ₁₀ Cl ₁₂	1,1a,2,2,3,3a,4,5,5,5a,5b,6-Dodecachlorooctahydro-1,3-4-metheno-1H-cyclobuta-[c,d]-pentalone

Tables Of Selected Chemical Compounds Targeted For Analysis

TABLE B. PCDD/PCDFS TARGETED FOR ANALYSIS

Common Name	CAS Registry	Molecular Formula	Chemical Name
2,3,7,8-TCDD	1746-10-6	C ₁₂ H ₄ Cl ₄ O ₂	2,3,7,8-Tetrachlorodibenzo-p-dioxin
Total-TCDD	41903-57-5	C ₁₂ H ₄ Cl ₄ O ₂	Tetrachlorodibenzo-p-dioxin
2,3,7,8-TCDF	41903-57-5	C ₁₂ H ₄ Cl ₄ O	2,3,7,8-Tetrachlorodibenzofuran
Total-TCDF	55722-27-5	C ₁₂ H ₄ Cl ₄ O	Tetrachlorodibenzofuran
1,2,3,7,8-PeCDD	40321-76-4	C ₁₂ H ₃ Cl ₅ O ₂	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
Total-PeCDD	36088-22-9	C ₁₂ H ₃ Cl ₅ O ₂	Pentachlorodibenzo-p-dioxin
1,2,3,7,8-PeCDF	57117-41-6	C ₁₂ H ₃ Cl ₅ O	1,2,3,7,8-Pentachlorodibenzofuran
2,3,4,7,8-PeCDF	57117-31-4	C ₁₂ H ₃ Cl ₅ O	2,3,4,7,8-Pentachlorodibenzofuran
Total-PeCDF	30402-15-4	C ₁₂ H ₃ Cl ₅ O	Pentachlorodibenzofuran
1,2,3,4,7,8-HxCDD	39227-28-6	C ₁₂ H ₂ Cl ₆ O ₂	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
1,2,3,6,7,8-HxCDD	57653-85-6	C ₁₂ H ₂ Cl ₆ O ₂	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
1,2,3,7,8,9-HxCDD	19408-74-3	C ₁₂ H ₂ Cl ₆ O ₂	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
Total-HxCDD	34465-46-08	C ₁₂ H ₂ Cl ₆ O ₂	Hexachlorodibenzo-p-dioxin
1,2,3,4,7,8-HxCDF	70648-26-8	C ₁₂ H ₂ Cl ₆ O	1,2,3,4,7,8-Hexachlorodibenzofuran
1,2,3,6,7,8-HxCDF	57117-44-9	C ₁₂ H ₂ Cl ₆ O	1,2,3,6,7,8-Hexachlorodibenzofuran
1,2,3,7,8,9-HxCDF	72918-21-9	C ₁₂ H ₂ Cl ₆ O	1,2,3,7,8,9-Hexachlorodibenzofuran
2,3,4,6,7,8-HxCDF	60851-34-5	C ₁₂ H ₂ Cl ₆ O	2,3,4,6,7,8-Hexachlorodibenzofuran
Total-HxCDF	55684-94-1	C ₁₂ H ₂ Cl ₆ O	Hexachlorodibenzofuran
1,2,3,4,6,7,8-HpCDD	35822-46-9	C ₁₂ H ₁ Cl ₇ O ₂	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
Total-HpCDD	37871-00-4	C ₁₂ H ₁ Cl ₇ O ₂	Heptachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-HpCDF	67562-39-4	C ₁₂ H ₁ Cl ₇ O	1,2,3,4,6,7,8-Heptachlorodibenzofuran
1,2,3,4,7,8,9-HpCDF	55673-89-7	C ₁₂ H ₁ Cl ₇ O	1,2,3,4,7,8,9-Heptachlorodibenzofuran
Total-HpCDF	38998-75-3	C ₁₂ H ₁ Cl ₇ O	Heptachlorodibenzofuran
OCDD	3268-87-9	C ₁₂ Cl ₈ O ₂	Octachlorodibenzo-p-dioxin
OCDF	39001-02-0	C ₁₂ Cl ₈ O	Octachlorodibenzofuran

Tables Of Selected Chemical Compounds Targeted For Analysis

TABLE C. PCBs TARGETED FOR ANALYSIS

IUPAC Number	CAS Registry	Molecular Formula	Chemical Name
77	32598-13-3	C ₁₂ H ₆ Cl ₄	3,3',4,4'-tetrachlorobiphenyl
126	57465-28-8	C ₁₂ H ₅ Cl ₅	3,3',4,4',5-pentachlorobiphenyl
169	32774-16-6	C ₁₂ H ₄ Cl ₆	3,3',4,4',5,5'-hexachlorobiphenyl
28	7012-37-5	C ₁₂ H ₇ Cl ₃	2,4,4'-trichlorobiphenyl
56	41464-43-1	C ₁₂ H ₆ Cl ₄	2,3,3',4'-tetrachlorobiphenyl
60	33025-41-1	C ₁₂ H ₆ Cl ₄	2,3,4,4'-tetrachlorobiphenyl
66	32598-10-1	C ₁₂ H ₆ Cl ₄	2,3',4,4'-tetrachlorobiphenyl
74	32690-93-0	C ₁₂ H ₆ Cl ₄	2,4,4',5-tetrachlorobiphenyl
105	32598-14-4	C ₁₂ H ₅ Cl ₅	2,3,3',4,4'-pentachlorobiphenyl
114	74472-37-0	C ₁₂ H ₅ Cl ₅	2,3,4,4',5-pentachlorobiphenyl
118	31508-00-6	C ₁₂ H ₅ Cl ₅	2,3',4,4',5-pentachlorobiphenyl
123	65510-44-3	C ₁₂ H ₅ Cl ₅	2',3,4,4',5-pentachlorobiphenyl
156	38380-08-4	C ₁₂ H ₄ Cl ₆	2,3,3',4,4',5-hexachlorobiphenyl
157	69782-90-7	C ₁₂ H ₄ Cl ₆	2,3,3',4,4',5'-hexachlorobiphenyl
167	52663-72-6	C ₁₂ H ₄ Cl ₆	2,3',4,4',5,5'-hexachlorobiphenyl
189	39635-31-9	C ₁₂ H ₃ Cl ₇	2,3,3',4,4',5,5'-heptachlorobiphenyl
52	35693-99-3	C ₁₂ H ₆ Cl ₄	2,2',5,5'-tetrachlorobiphenyl
99	38380-01-7	C ₁₂ H ₅ Cl ₅	2,2',4,4',5-pentachlorobiphenyl
101	37680-73-2	C ₁₂ H ₅ Cl ₅	2,2',4,5,5'-pentachlorobiphenyl
128	38380-07-3	C ₁₂ H ₄ Cl ₆	2,2',3,3',4,4'-hexachlorobiphenyl
137	35694-06-5	C ₁₂ H ₄ Cl ₆	2,2',3,4,4',5-hexachlorobiphenyl
138	35065-28-2	C ₁₂ H ₄ Cl ₆	2,2',3,4,4',5'-hexachlorobiphenyl
146	51908-16-8	C ₁₂ H ₄ Cl ₆	2,2',3,4',5,5'-hexachlorobiphenyl
153	35065-27-1	C ₁₂ H ₄ Cl ₆	2,2',4,4',5,5'-hexachlorobiphenyl
158	74472-42-7	C ₁₂ H ₄ Cl ₆	2,3,3',4,4',6-hexachlorobiphenyl
170	35065-30-6	C ₁₂ H ₃ Cl ₇	2,2',3,3',4,4',5-heptachlorobiphenyl
180	35065-29-3	C ₁₂ H ₃ Cl ₇	2,2',3,3',4,4',5,5'-heptachlorobiphenyl
190	41411-64-7	C ₁₂ H ₃ Cl ₇	2,3,3',4,4',5,6-heptachlorobiphenyl
191	74472-50-7	C ₁₂ H ₃ Cl ₇	2,3,3',4,4',5',6-heptachlorobiphenyl
194	35694-08-7	C ₁₂ H ₂ Cl ₈	2,2',3,3',4,4',5,5'-octachlorophenyl
177	52663-70-4	C ₁₂ H ₃ Cl ₇	2,2',3,3',4',5,6-heptachlorobiphenyl
178	52663-67-9	C ₁₂ H ₃ Cl ₇	2,2,3,3',5,5',6-heptachlorobiphenyl
182	60145-23-5	C ₁₂ H ₃ Cl ₇	2,2',3,4,4',5,6'-heptachlorobiphenyl
183	52663-69-1	C ₁₂ H ₃ Cl ₇	2,2',3,4,4',5',6-heptachlorobiphenyl
187	52663-68-0	C ₁₂ H ₃ Cl ₇	2,2',3,4',5,5',6-heptachlorobiphenyl

Appendix 2

Questionnaires

Dietary Questionnaire

Breast Cancer Study Questionnaire

DIETARY QUESTIONNAIRE

STANFORD UNIVERSITY MEDICAL CENTER
CALIFORNIA DEPARTMENT OF HEALTH SERVICES
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Hospital Use Only (leave blank)

ID # _____

MR # _____

INSTRUCTIONS: This is a questionnaire to collect information about your normal eating habits. Your answers will be used in a study being conducted by the California Department of Health Services and California Department of Toxic Substances Control, in conjunction with Stanford University Medical Center. Any information you give will be kept confidential and your name will never appear in any published reports or findings.

Please answer all questions as completely as possible.

For most questions, you will only need to check ☒ one of several boxes ☐. (Example: ☒) You should check the answer which most closely reflects your answer.

Please ignore the small numbers in parentheses above each check box ☐. They are for coding purposes.

1. During the past year, have you taken any vitamins, minerals or supplemental tablets? (check one)

(1) <input type="checkbox"/> No	(2) <input type="checkbox"/> Yes, fairly regularly	(3) <input type="checkbox"/> Yes, but not regularly	(9) <input type="checkbox"/> Don't know
---------------------------------------	----------------------------------------------------------------	-----------------------------------------------------------------	--------------------------------------------------

IF YES, please use the table below to tell us which tablets you took and how many you took?

VITAMIN TYPE	HOW MANY TABLETS?							
	NONE	1-3 per WEEK	4-6 per WEEK	1 per DAY	2 per DAY	3 per DAY	4 per DAY	5+ per DAY
	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Multiple Vitamins								
Stress-tabs type (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic, Theragran type (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One-a-day type, or Centrum (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Vitamins								
Vitamin A (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vitamin E (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calcium, or Dolomite (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vitamin C (check one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you currently take Calcium or Vitamin C: (check one for each question)

How many milligrams are in each Calcium tablet? ☐ 100 ☐ 250 ☐ 500 ☐ 600 ☐ (9) Don't know

How many milligrams are in each Vitamin C tablet? ☐ 100 ☐ 250 ☐ 500 ☐ 600 ☐ (9) Don't know

2. Do you smoke cigarettes now? (check one)

(1) <input type="checkbox"/> No	(2) <input type="checkbox"/> Yes	(9) <input type="checkbox"/> Don't know
---------------------------------------	----------------------------------------	-----------------------------------------------

IF YES, on average, about how many cigarettes a day do you smoke now? (check one)

(1) <input type="checkbox"/> 1 to 5 per day	(2) <input type="checkbox"/> 6 to 14 per day	(3) <input type="checkbox"/> 15 to 24 per day	(4) <input type="checkbox"/> 25 to 34 per day	(5) <input type="checkbox"/> 35 or more per day	(9) <input type="checkbox"/> Don't know
------------------------------------------------------	-------------------------------------------------------	--------------------------------------------------------	--------------------------------------------------------	-------------------------------------------------------------	-----------------------------------------------

3. About how many times in your life have you gone on a diet to lose weight? (check one)

(1) <input type="checkbox"/> Never	(2) <input type="checkbox"/> 1 to 2 times	(3) <input type="checkbox"/> 3 to 5 times	(4) <input type="checkbox"/> 6 to 8 times	(5) <input type="checkbox"/> 9 to 11 times	(6) <input type="checkbox"/> 12 or more times	(9) <input type="checkbox"/> Don't know
------------------------------------------	----------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------	-----------------------------------------------------------	-----------------------------------------------

4. On average, how often do you add salt to your food?
(check one)

(1) <input type="checkbox"/> Seldom or Never	(2) <input type="checkbox"/> Sometimes	(3) <input type="checkbox"/> Often or Always	(9) <input type="checkbox"/> Don't know
-------------------------------------------------------	----------------------------------------------	-------------------------------------------------------	-----------------------------------------------

5. On average, how often do you add pepper to your food?
(check one)

(1) <input type="checkbox"/> Seldom or Never	(2) <input type="checkbox"/> Sometimes	(3) <input type="checkbox"/> Often or Always	(9) <input type="checkbox"/> Don't know
-------------------------------------------------------	----------------------------------------------	-------------------------------------------------------	-----------------------------------------------

6. On average, how often do you eat the skin on chicken?
(check one)

(1) <input type="checkbox"/> Seldom or Never	(2) <input type="checkbox"/> Sometimes	(3) <input type="checkbox"/> Often or Always	(9) <input type="checkbox"/> Don't know
-------------------------------------------------------	----------------------------------------------	-------------------------------------------------------	-----------------------------------------------

7. On average, how often do you eat the fat on meat?
(check one)

(1) <input type="checkbox"/> Seldom or Never	(2) <input type="checkbox"/> Sometimes	(3) <input type="checkbox"/> Often or Always	(9) <input type="checkbox"/> Don't know
-------------------------------------------------------	----------------------------------------------	-------------------------------------------------------	-----------------------------------------------

8. What kinds of fat do you usually use in cooking (to fry, stir-fry, or sauté)? (check all that apply)

- | | | |
|---------------------------------------------------|------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Stick Margarine | <input type="checkbox"/> Butter | <input type="checkbox"/> Soft Tub Margarine |
| | <input type="checkbox"/> Low-Calorie Margarine | <input type="checkbox"/> Crisco |
| <input type="checkbox"/> Lard, fatback, bacon fat | <input type="checkbox"/> PAM or no oil | <input type="checkbox"/> Don't know or don't cook |

9. What kinds of fat do you usually add to vegetables, potatoes, etc.? (check all that apply)

- | | | |
|---------------------------------------------------|----------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> Stick Margarine | <input type="checkbox"/> Soft Tub Margarine | <input type="checkbox"/> Crisco |
| <input type="checkbox"/> Butter | <input type="checkbox"/> Whipped butter | <input type="checkbox"/> Don't know or don't cook |
| <input type="checkbox"/> Oil (give type) _____ | <input type="checkbox"/> Low-Calorie Margarine | <input type="checkbox"/> None |
| <input type="checkbox"/> Lard, fatback, bacon fat | <input type="checkbox"/> 1/2 butter, 1/2 margarine | |

10. In the past year, about how often did you eat the following foods from restaurants or carry-outs?

TYPE OF RESTAURANT	NUMBER OF VISITS THE PAST YEAR							
	NEVER IN PAST YEAR (1)	1-4 TIMES IN PAST YEAR (2)	5-11 TIMES IN PAST YEAR (3)	1-3 TIMES IN PAST MONTH (4)	ONCE A WEEK (5)	2-4 TIMES A WEEK (6)	ALMOST EVERY DAY (7)	DON'T KNOW (8)
Fried Chicken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Burgers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pizzas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chinese food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mexican food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fried fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other restaurants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. This section is about your usual eating habits over the past year. For this section, you will be checking boxes in several large tables that list different types of foods. To complete these tables, please do the following:

First: Mark whether your usual serving size is small (S), medium (M) or large (L). Medium serving amounts are listed beside each food item to help you judge your serving size. A small serving is half or less than half the size of the medium serving size shown. A large serving is about one-and-a-half times or more the medium serving size shown. Please DO NOT leave serving size blank. (See example below.)

Second: Mark the appropriate column to show how often, on the average, you ate the listed food during the past year. Please BE CAREFUL which column you put your answer in. (See example below.)

Please DO NOT SKIP any foods. If you never eat a food that is listed in the table, or if you don't know or don't remember eating a food, check the box labeled "Never or less than once a month".

Example:

In the past year, this person ate:

- ☒ a medium serving of rice about twice per month
- ☒ no squash
- ☒ a large serving of high fiber bran cereal once a day
- ☒ a small candy bar about once a week

EXAMPLE

EXAMPLE

TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)
		S	M	L									
Rice	3/4 cup	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Winter squash, baked squash	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High fiber, bran or granola cereals, shredded wheat	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chocolate candy	1 small bar or 1 ounce	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the breakfast foods you ate during the past year.

BREAKFAST FOODS

TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)
		S	M	L									
High fiber, bran or granola cereals, shredded wheat	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Highly fortified cereals, such as Product 19, Total or Most	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other cold cereals, such as corn flakes, Rice Krispies	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooked cereals	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eggs	1 egg = small 2 eggs = med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bacon	2 slices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sausage	2 patties or links	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the fruits and juices you have eaten during the past year.

FRUITS AND JUICES

TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)
		S	M	L									
Apples, applesauce, pears	1 medium or 1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cantaloupe (in season)	1/4 medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oranges	1 medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grapefruit	1/2 medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orange juice or grapefruit juice	6 ounce glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other fruit juices, fortified fruit drinks	6 ounce glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any other fruit, including bananas, fruit cocktail	1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the vegetables you ate during the past year.

VEGETABLES			AVERAGE CONSUMPTION LAST YEAR									
TYPE OF FOOD	QUANTITY		NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)	
	MEDIUM SERVING	YOUR SERVING SIZE S M L										
Beans such as baked beans, pintos, kidney, limas or in chili	3/4 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tomatoes, tomato juice	1 medium or 6 ounce glass	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Broccoli	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spinach	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mustard greens, turnip greens, collards	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cole slaw, cabbage, sauerkraut	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Carrots or mixed vegetables containing carrots	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Green salad	1 medium bowl	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Regular salad dressing & mayonnaise, including on sandwiches	2 tablespoons	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
French fries and fried potatoes	3/4 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sweet potatoes, yams	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other potatoes, including boiled, baked, mashed & potato salad	1 medium or 1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rice	3/4 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Any other vegetable, including green beans, corn, peas	1/2 cup	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Please use this table to tell us about the meat, fish, poultry and lunch items you ate during the past year.

MEAT, FISH, P OULTRY, LUNCH ITEMS

TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)
Hamburgers, cheeseburgers, meatloaf	1 medium or 4 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beef (steaks, roasts, etc. including on sandwiches)	4 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beef stew or pot pie with carrots or other vegetables	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liver, including chicken livers	4 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pork, including chops, roasts	2 chops or 4 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fried chicken	2 small or 1 large piece	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chicken or turkey (roasted, stewed or broiled, including on sandwiches)	2 small or 1 large piece	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fried fish or fish sandwich	4 ounces or 1 sandwich	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other fish (broiled or baked)	2 pieces or 4 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spaghetti, lasagna, other pasta with tomato sauce	1 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot dogs	2 hot dogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ham, bologna, salami and other lunch meats	2 slices or 2 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetable & tomato soups including vegetable beef, minestrone	1 medium bowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the breads, snacks and spreads ate during the past year.

BREADS , SNACKS , S PREADS

BREADS , SNACKS , SPREADS

TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2 + PER DAY (9)
		S	M	L									
Biscuits, muffins, burger rolls (including fast food)	1 medium piece	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
White breads (including sandwiches, bagels, French or Italian breads)	2 slices or 3 crackers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dark breads, such as white wheat, rye, pumpernickel	2 slices or 3 crackers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corn bread, corn muffins, corn tortillas or grits	1 medium piece	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salty snacks such as chips, popcorn	2 handfuls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peanuts, peanut butter	2 tablespoons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Margarine on bread or vegetable	2 pats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Butter on bread or vegetables	2 pats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cheeses and cheese spreads (not including cottage cheese)	2 slices or 2 ounces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the sweets you ate during the past year.

SWEETS

SWEETS													
TYPE OF FOOD	QUANTITY			AVERAGE CONSUMPTION LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1 PER MONTH (2)	2 - 3 PER MONTH (3)	1 PER WEEK (4)	2 PER WEEK (5)	3 - 4 PER WEEK (6)	5 - 6 PER WEEK (7)	1 PER DAY (8)	2+ PER DAY (9)
		S	M	L									
Ice Cream	1 scoop or 1/2 cup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doughnuts, cookies, cake, pastry	1 piece or 3 cookies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pies	1 medium slice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chocolate candy	1 small bar or 1 ounce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use this table to tell us about the beverages you drank during the past year.

(PLEASE NOTE THAT THE CATEGORIES FOR THESE COLUMNS ARE DIFFERENT.)

Beverages

Beverages													
TYPE OF FOOD	QUANTITY			AVERAGE USE LAST YEAR									
	MEDIUM SERVING	YOUR SERVING SIZE			NEVER OR LESS THAN ONCE PER MONTH (1)	1-3 PER MONTH (2)	1 PER WEEK (3)	2-4 PER WEEK (4)	5-6 PER WEEK (5)	1 PER DAY (6)	2-3 PER DAY (7)	4-5 PER DAY (8)	6+ PER DAY (9)
		S	M	L									
Whole milk and beverages with whole milk (not including on cereal)	8 ounce glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2% milk and beverages with 2% milk (not including on cereal)	8 ounce glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skim milk, 1% milk or butter-milk (not including on cereal)	8 ounce glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular soft drinks (not diet soda)	12 ounce can or bottle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beer	12 ounce can or bottle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wine or wine coolers	1 medium glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liquor	1 shot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Milk or cream in coffee or tea	1 tablespoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sugar in coffee or tea or on cereal	2 teaspoons = medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. On average, how often in the **PAST YEAR** have you used fat or oil in cooking meals? (check one)

(1) <input type="checkbox"/> Less than once per week	(2) <input type="checkbox"/> 1 to 2 times per week	(3) <input type="checkbox"/> 3 to 4 times per week	(4) <input type="checkbox"/> 5 to 6 times per week	(5) <input type="checkbox"/> 1 time per day	(6) <input type="checkbox"/> 2 times per day	(7) <input type="checkbox"/> 3 times per day	(8) <input type="checkbox"/> 4 or more times per day	(9) <input type="checkbox"/> Don't know
------------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------	---------------------------------------------------	----------------------------------------------------	----------------------------------------------------	------------------------------------------------------------	-----------------------------------------------

12. On average, how often in the **PAST YEAR** have you eaten a serving of vegetables, not counting salad or potatoes? (check one)

(1) <input type="checkbox"/> Less than once per week	(2) <input type="checkbox"/> 1 to 2 times per week	(3) <input type="checkbox"/> 3 to 4 times per week	(4) <input type="checkbox"/> 5 to 6 times per week	(5) <input type="checkbox"/> 1 time per day	(6) <input type="checkbox"/> 2 times per day	(7) <input type="checkbox"/> 3 times per day	(8) <input type="checkbox"/> 4 or more times per day	(9) <input type="checkbox"/> Don't know
------------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------	---------------------------------------------------	----------------------------------------------------	----------------------------------------------------	------------------------------------------------------------	-----------------------------------------------

13. On average, how often in the **PAST YEAR** have you eaten a serving of fruit, not counting juices?
(check one)

(1) <input type="checkbox"/> Less than once per week	(2) <input type="checkbox"/> 1 to 2 times per week	(3) <input type="checkbox"/> 3 to 4 times per week	(4) <input type="checkbox"/> 5 to 6 times per week	(5) <input type="checkbox"/> 1 time per day	(6) <input type="checkbox"/> 2 times per day	(7) <input type="checkbox"/> 3 times per day	(8) <input type="checkbox"/> 4 or more times per day	(8) <input type="checkbox"/> Don't know
------------------------------------------------------------------	----------------------------------------------------------------	----------------------------------------------------------------	----------------------------------------------------------------	---------------------------------------------------------	----------------------------------------------------------	----------------------------------------------------------	------------------------------------------------------------------	--------------------------------------------------

14. How many times during the **PAST 4 WEEKS** have you eaten flame-broiled food (food grilled over charcoal, gas or wood fire)? (check one)

(1) <input type="checkbox"/> Never	(2) <input type="checkbox"/> 1 to 2 times	(3) <input type="checkbox"/> 3 to 4 times	(4) <input type="checkbox"/> 5 to 6 times	(5) <input type="checkbox"/> 7 to 10 times	(6) <input type="checkbox"/> 11 to 15 times	(7) <input type="checkbox"/> 16 or more times	(8) <input type="checkbox"/> Don't know
------------------------------------------	----------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------	------------------------------------------------------	-----------------------------------------------------------	--------------------------------------------------

15. If you ate flame-broiled food during the **PAST 4 WEEKS**, how many days ago did you last eat it?
(check one)

(1) <input type="checkbox"/> Didn't eat it	(2) <input type="checkbox"/> 1 to 2 times	(3) <input type="checkbox"/> 3 to 4 times	(4) <input type="checkbox"/> 5 to 6 times	(5) <input type="checkbox"/> 7 to 10 times	(6) <input type="checkbox"/> 11 to 15 times	(7) <input type="checkbox"/> 16 or more times	(8) <input type="checkbox"/> Don't know
-----------------------------------------------------	----------------------------------------------------	----------------------------------------------------	----------------------------------------------------	-----------------------------------------------------	------------------------------------------------------	-----------------------------------------------------------	--------------------------------------------------

Thank you for completing our questionnaire.
Your answers will be very helpful to our study.

BREAST CANCER STUDY PERSONAL HISTORY

STANFORD UNIVERSITY MEDICAL CENTER
CALIFORNIA DEPARTMENT OF HEALTH SERVICES
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Hospital Use Only (LEAVE BLANK)

ID # _____

MR # _____

INSTRUCTIONS: Complete interviewer information above. Ask questions as worded in this questionnaire.

1. Where appropriate check ☒ the box ☐ that best matches the respondents answer.
2. If a respondent does not know an answer or refuses to answer, check ☒ the (☐ (9) DK/RF) box.
3. *PRINT* all fill-in answers clearly in the blanks provided.
4. A respondent may need to answer additional questions, after answering an initial question. An arrow ➡ will appear in the questionnaire telling you which additional questions to ask next.
5. You may need to skip certain questions which are not applicable to the respondent.
➡ **Jump** instructions will appear in the questionnaire telling you which questions to skip.
6. Read to the respondent any text which appears in sentence case.
DO NOT READ TEXT WHICH APPEARS IN ALL CAPS.

Interviewer Initials: _____

Date: ____/____/____

Time Began: ____:____

☐ am

☐ pm

SECTION 1: BACKGROUND INFORMATION ABOUT THE RESPONDENT

I would like to begin by asking you some questions about your background.

1. What is your date of birth? (FILL IN OR CHECK BOX) ____/____/____ ☐ (99/99/99) DK/RF
MM DD YY
2. How old were you on your last birthday? (FILL IN OR CHECK BOX) _____ years old
☐ (999) DK/RF

I would like to ask about you and your family's ethnic and racial backgrounds. These questions will be about you, your biological mother and your biological father.

3. Where were you born? (FILL IN OR CHECK BOX)
CITY: _____ STATE/COUNTRY: _____
☐ (9) DK/RF ☐ (9) DK/RF
4. Where was your **mother** born? (FILL IN OR CHECK BOX)
CITY: _____ STATE/COUNTRY: _____
☐ (9) DK/RF ☐ (9) DK/RF
5. Where was your **father** born? (FILL IN OR CHECK BOX)
CITY: _____ STATE/COUNTRY: _____
☐ (9) DK/RF ☐ (9) DK/RF

6. Do you consider yourself... (READ OPTIONS, CHECK ONE BOX)

- | | |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <input type="checkbox"/> (01) White | <input type="checkbox"/> (09) Asian Indian, Pakistani, Sri Lankan (Ceylonese) |
| <input type="checkbox"/> (02) Black / African American | <input type="checkbox"/> (10) Vietnamese |
| <input type="checkbox"/> (03) American Indian, Aleutian or Eskimo | <input type="checkbox"/> (11) Laotian |
| <input type="checkbox"/> (04) Chinese | <input type="checkbox"/> (12) Hmong |
| <input type="checkbox"/> (05) Japanese | <input type="checkbox"/> (13) Kampuchean (Cambodian) |
| <input type="checkbox"/> (06) Filipino | <input type="checkbox"/> (14) Some other race/ethnicity _____ |
| <input type="checkbox"/> (07) Hawaiian | <input type="checkbox"/> (15) Mixed race/ethnicity _____ |
| <input type="checkbox"/> (08) Korean | <input type="checkbox"/> (99) DK/RF |

7. Do you consider yourself to be Hispanic or Latina? (CHECK ONE BOX)

- ☐ (1) YES ➡ ➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. Which of the following best describes your Hispanic or Latina background?

(READ OPTIONS, CHECK ONE BOX)

- | | |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> (1) Mexican | <input type="checkbox"/> (6) Another Hispanic or Latina Background: _____ |
| <input type="checkbox"/> (2) Puerto Rican | |
| <input type="checkbox"/> (3) Cuban | <input type="checkbox"/> (7) Another unknown Hispanic or Latina Background |
| <input type="checkbox"/> (4) South or Central American
(except Brazilian) | <input type="checkbox"/> (9) DK/RF |
| <input type="checkbox"/> (5) Spanish | |

8. What is the highest year of school or the highest degree that you completed?

(CHECK ONE BOX AND CIRCLE YEARS)

- ☐ (1) GRADE SCHOOL 01 02 03 04 05 06 07 08
- ☐ (2) HIGH SCHOOL 09 10 11 12
- ☐ (3) COLLEGE 13 14 15 16
- ☐ (4) GRADUATE WORK 17+
- ☐ (5) MA / MS 18
- ☐ (6) Ph.D. / MD 19
- ☐ (9) DK/RF 99

9. Are you presently married, living as married, widowed, separated, divorced or have you never married?

(CHECK ONE BOX)

- ☐ (1) MARRIED
- ☐ (2) LIVING AS MARRIED
- ☐ (3) WIDOWED
- ☐ (4) SEPARATED
- ☐ (5) DIVORCED
- ☐ (6) NEVER MARRIED (~~SK~~ JUMP TO QUESTION 15)
- ☐ (9) DK/RF

Now I would like to ask you a few questions about your [HUSBAND / PARTNER]

10. What is the highest year of school or the highest degree that your [HUSBAND / PARTNER] completed?
(CHECK ONE BOX AND CIRCLE YEARS)

- ☐ (1) GRADE SCHOOL 01 02 03 04 05 06 07 08
☐ (2) HIGH SCHOOL 09 10 11 12
☐ (3) COLLEGE 12 13 14 15
☐ (4) GRADUATE WORK 17+
☐ (5) MA / MS 18
☐ (6) Ph.D. / MD 19
☐ (9) DK/RF 99

11. During his adult life, what has your [HUSBAND / PARTNER] been doing most? Has he been... (READ
OPTIONS, CHECK ONE BOX)

- ☐ (1) ...working?
☐ (2) ...keeping house?
☐ (3) ...not working because of a permanent disability?
☐ (4) ...doing something else: _____
☐ (9) DK/RF

12. What has been his usual occupation (or complete job title)? That is, what occupation has your
[HUSBAND / PARTNER] worked at the longest during his adult life? (FILL IN OR CHECK BOX)

 _____ ☐ (9) DK/RF

13. What have been his activities or duties in this job? (FILL IN OR CHECK BOX)

 _____ ☐ (9) DK/RF

14. In what kind of business or industry was this job? That is, what does the company make or do?
(FILL IN OR CHECK BOX)

 _____ ☐ (9) DK/RF

15. Are you currently living with...

...a [HUSBAND / PARTNER]? (CHECK ONE BOX) ☐ (1) YES ☐ (2) NO ☐ (9) DK/RF...your children or grandchildren? (CHECK ONE BOX) ☐ (1) YES ☐ (2) NO ☐ (9) DK/RF...other relative(s)? (CHECK ONE BOX) ☐ (1) YES ☐ (2) NO ☐ (9) DK/RF...friends? (CHECK ONE BOX) ☐ (1) YES ☐ (2) NO ☐ (9) DK/RF...someone else? (CHECK ONE BOX) ☐ (1) YES ☐ (2) NO ☐ (9) DK/RF

(SPECIFY) _____

16. How many children age 17 or less are living in your household? (FILL IN OR CHECK BOX) _____ children
☐ (99) DK/RF17. How many people altogether live in your household, including yourself and any children?
(FILL IN OR CHECK BOX)

_____ people

☐ (98) NA (INSTITUTIONALIZED)☐ (99) DK/RF

18. Just before your recent illness, did you live alone? (CHECK ONE BOX)

☐ (1) YES☐ (2) NO☐ (2) NA (INSTITUTIONALIZED BEFORE RECENT ILLNESS)☐ (9) DK/RF

19. Please tell me the city and state (or country if outside U.S.) where...

CITY

STATE / COUNTRY

...you lived when you were born?
(FILL IN OR CHECK ONE BOX)☐ (9) DK/RF☐ (9) DK/RF...you live now?
(FILL IN OR CHECK ONE BOX)☐ (9) DK/RF☐ (9) DK/RF...you lived 5 years ago?
(FILL IN OR CHECK ONE BOX)☐ (8) NA☐ (9) DK/RF☐ (8) NA☐ (9) DK/RF...you lived 20 years ago (in 19____) ?
(FILL IN OR CHECK ONE BOX)☐ (8) NA☐ (9) DK/RF☐ (8) NA☐ (9) DK/RF...you lived 40 years ago (in 19____) ?
(FILL IN OR CHECK ONE BOX)☐ (8) NA☐ (9) DK/RF☐ (8) NA☐ (9) DK/RF...you lived 60 years ago (in 19____) ?
(FILL IN OR CHECK ONE BOX)☐ (8) NA☐ (9) DK/RF☐ (8) NA☐ (9) DK/RF

20. Thinking back to places where you lived during your lifetime (from birth to the present), were any of these residences within a half mile of...

	(CHECK ONE BOX)	A. How long did you live there? (FILL IN + SPECIFY MONTHS/YEARS OR CHECK BOX)
...a major highway (at least 4 lanes)?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a chemical plant? (DESCRIBE TYPE)	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a power plant?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a smelter? (DESCRIBE TYPE)	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a pulp mill?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a foundry?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a mine? (DESCRIBE TYPE)	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...an oil refinery?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...a landfill site?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...another source(s) of pollution? (DESCRIBE TYPE)	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...an airport?	<input type="checkbox"/> (1) YES ➡ ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF

21. Were any of these residences within one block of major transmission power lines (not the kind that connect electrical service to a house)? (CHECK ONE BOX)

- ☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. How long did you live there? (FILL IN + SPECIFY MONTHS/YEARS OR CHECK BOX)

☐ months
☐ years
☐ (999) DK/RF

22. The next questions are about your exposure to pesticides and herbicides at various stages of your life. Pesticides are chemicals used to control insects or to disinfect or destroy pests. Herbicides are chemicals used to control weeds.

SHOW CARD 1	During your childhood or early adolescence... [During your young adulthood (in your 20's)... [During the last 10 years... [
...how often did you use insect repellent on your skin or clothing? Would you say it was... (READ OPTIONS, CHECK ONE)	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF
...how often were pesticides or herbicides used in your home, on your lawn or in your garden? Would you say it was... (READ OPTIONS, CHECK ONE)	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF
...how often were you in a public place when insects or plants were sprayed so that you were in a cloud of spray? Would you say it was... (READ OPTIONS, CHECK ONE)	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF
...how often did you live or work on a farm or ranch where pesticides or herbicides were used? Would you say it was... (READ OPTIONS, CHECK ONE)	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF
...how often did you use flea or tick control products on pets? Would you say it was... (READ OPTIONS, CHECK ONE)	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) never? <input type="checkbox"/> (2) rarely? <input type="checkbox"/> (3) sometimes <input type="checkbox"/> (4) frequently year round? <input type="checkbox"/> (5) frequently in a given season? <input type="checkbox"/> (9) DK/RF

23. During your adult life, what have you been doing most? Have you been... (READ OPTIONS, CHECK ONE BOX)

☐ (1) ...working?

☐ (2) ...keeping house?

☐ (3) ...not working because of a permanent disability?

☐ (4) ...doing something else: _____

☐ (9) DK/RF

24. What occupation have you worked at the longest during your adult life? (FILL IN OR CHECK BOX)

☐ (9) DK/RF

25. How many years did you work in this occupation? (FILL IN OR CHECK BOX) _____ years

☐ (9) DK/RF

26. What have been your usual activities or duties in this job? (FILL IN OR CHECK BOX)

☐ (9) DK/RF

27. In what kind of business or industry was this job? That is, what does the company make or do?
(FILL IN OR CHECK BOX)

☐ (9) DK/RF

28. Have you ever worked at any of the following jobs full-time, part-time or seasonally for a total of 6 months or more?

	(CHECK ONE BOX)	A. At what age did you first start doing this job? (FILL IN OR CHECK BOX)	B. How long did you work at this job? (FILL IN + SPECIFY MONTHS/ YEARS OR CHECK BOX)
...farmer or farm worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...gardener or landscaper (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...horticulturist or nursery worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...roadside or right-of-way brush and weed controller? (for 6 or more months)	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...pesticide or fertilizer factory worker? (for 6 or more months)	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...professional launderer or dry cleaner (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...factory worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...electrical or electronic repair worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...radar or radio operator (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...telephone or telegraph operator (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...hairdresser or manicurist (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...textile processor (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...pulp and paper worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...janitor or custodial worker (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
...bus or truck driver (for 6 or more months)?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	_____ years old <input type="checkbox"/> (999) DK/RF	<input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF

SECTION 2: INFORMATION ABOUT THE RESPONDENT'S MEDICAL HISTORY

29. Has a doctor ever told you that you had...

	(CHECK ONE BOX)
...adult onset diabetes ?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF
...high blood pressure?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF
...heart disease?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF
...thyroid problems?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF
...a benign breast tumor?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF
...a benign ovarian tumor?	<input type="checkbox"/> (1) YES ➡➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF

A. How old were you when a doctor first told you that you had [CONDITION]?
(FILL IN OR CHECK BOX)

_____ years old <input type="checkbox"/> (999) DK/RF
_____ years old <input type="checkbox"/> (999) DK/RF
_____ years old <input type="checkbox"/> (999) DK/RF
_____ years old <input type="checkbox"/> (999) DK/RF
_____ years old <input type="checkbox"/> (999) DK/RF

30. Has a doctor ever told you that you had cancer? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
☐ (2) NO
☐ (9) DK/RF

A. In what part of your body did the tumor originate and how old were you when it was diagnosed? (FILL IN OR CHECK BOX)

Place where tumor originated	Age at diagnosis
1. _____ <input type="checkbox"/> (9) DK/RF	_____ years of age <input type="checkbox"/> (999) DK/RF
2. _____ <input type="checkbox"/> (9) DK/RF	_____ years of age <input type="checkbox"/> (999) DK/RF
3. _____ <input type="checkbox"/> (9) DK/RF	_____ years of age <input type="checkbox"/> (999) DK/RF
4. _____ <input type="checkbox"/> (9) DK/RF	_____ years of age <input type="checkbox"/> (999) DK/RF

Now I have a question about radiation treatments you may have received during your lifetime. I am interested in radiation, such as x-rays, used to treat a medical condition, not for diagnosis.

31. Have you ever received **radiation treatment** for any medical condition (including for scars, acne, birthmarks or respiratory problems such as tuberculosis)? (CHECK ONE BOX)

☐ (1) YES ➡➡ I would like to ask you about each radiation treatment, beginning with the first.

☐ (2) NO ASK QUESTIONS "A" - "F" FOR EACH CONDITION REPORTED

☐ (9) DK/RF

	A. What was the condition and the location on your body which was treated? (FILL IN OR CHECK BOX)	B. What date the condition was <u>first</u> diagnosed? (FILL IN OR CHECK BOX)	C. How many radiation treatments did you receive for [CONDITION]? (FILL IN OR CHECK BOX)	
(1)	CONDITION <input type="checkbox"/> (9) DK/RF LOCATION <input type="checkbox"/> (9) DK/RF	____ / ____ <input type="checkbox"/> (99/99) DK/RF mm yy	____ treatments <input type="checkbox"/> (99) DK/RF	➡ ➡ ➡
(2)	CONDITION <input type="checkbox"/> (9) DK/RF LOCATION <input type="checkbox"/> (9) DK/RF	____ / ____ <input type="checkbox"/> (99/99) DK/RF mm yy	____ treatments <input type="checkbox"/> (99) DK/RF	➡ ➡ ➡
(3)	CONDITION <input type="checkbox"/> (9) DK/RF LOCATION <input type="checkbox"/> (9) DK/RF	____ / ____ <input type="checkbox"/> (99/99) DK/RF mm yy	____ treatments <input type="checkbox"/> (99) DK/RF	➡ ➡ ➡

32. A mammogram is an X-ray of the breast to check for cancer. It involves pressing the breast between 2 plastic plates. Have you ever had a mammogram? (CHECK ONE BOX)

☐ (1) YES ➡➡

☐ (2) NO

☐ (9) DK/RF

A. About how many mammograms have you had in the last five years? (CHECK ONE BOX)

☐ (0) NONE

☐ (3) THREE

☐ (9) DK/RF

☐ (1) ONE

☐ (4) FOUR

☐ (2) TWO

☐ (5) FIVE OR MORE

B. Was your last mammogram done as part of a routine checkup, because of a breast problem or because you have had breast cancer? (CHECK ONE BOX)

☐ (1) ROUTINE CHECKUP

☐ (3) HAD BREAST CANCER

☐ (2) BREAST PROBLEM

☐ (9) DK/RF

D. When did the radiation treatment for [CONDITION] begin and end? (FILL IN OR CHECK BOX)	E. Excluding those time periods during which you were not receiving radiation treatment for [CONDITION], how long did you receive radiation treatment? (FILL IN + SPECIFY WEEKS/MONTHS/YEARS OR CHECK BOX)	F. How many weeks, months or years did your treatments for [CONDITION] last? (FILL IN + SPECIFY WEEKS/MONTHS/YEARS OR CHECK BOX)
➡ 19 ____ or at age ____ BEGAN <input type="checkbox"/> (999) DK/R ➡ 19 ____ or at age ____ ENDED <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
➡ 19 ____ or at age ____ BEGAN <input type="checkbox"/> (999) DK/R ➡ 19 ____ or at age ____ ENDED <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF
➡ 19 ____ or at age ____ BEGAN <input type="checkbox"/> (999) DK/R ➡ 19 ____ or at age ____ ENDED <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF	<input type="radio"/> weeks <input type="radio"/> months <input type="radio"/> years <input type="checkbox"/> (999) DK/RF

33. Have you ever received X-rays to the chest or back for any other reason than those you have already mentioned? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
☐ (2) NO
☐ (9) DK/RF

A. What was the reason for those chest X-rays? (FILL IN OR CHECK BOX)

☐ (9) DK/RF

B. About how many chest X-rays have you had in your lifetime? (FILL IN OR CHECK BOX)

____ chest X-rays
☐ (999) DK/RF

C. Approximately how old were you when you had those chest X-rays?
(FILL IN OR CHECK BOX)

____ years of age
☐ (999) DK/RF

____ years of age
☐ (999) DK/RF

____ years of age
☐ (999) DK/RF

____ years of age
☐ (999) DK/RF

____ years of age
☐ (999) DK/RF

____ years of age
☐ (999) DK/RF

SECTION 3: INFORMATION ABOUT THE RESPONDENT'S REPRODUCTIVE HISTORY

Now I would like to ask you some questions about your reproductive history.

34. How old were you when you had your first menstrual period? (FILL IN OR CHECK ONE BOX)

- _____ years of age
☐ (998) NA (HAS NEVER MENSTRUATED)
☐ (999) DK/RF

35. Have you ever been pregnant, even for a short time? (That would include live births, still births, therapeutic or induced abortions, molar pregnancies and ectopic pregnancies.) (CHECK ONE BOX)

- ☐ (1) YES
☐ (2) NO (~~SW~~ JUMP TO SECTION 4)
☐ (9) DK/RF (~~SW~~ JUMP TO SECTION 4)

36. How many of your pregnancies have resulted in a live birth? (FILL IN OR CHECK BOX)

- _____ live births
☐ (99) DK/RF

37. Did you breast feed any of your children? (CHECK ONE BOX)

- ☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. Starting with your first child, please tell me how many weeks or months you breast fed each child? (FILL IN + SPECIFY WEEKS/MONTHS OR CHECK BOX)

CHILD 1: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF	CHILD 3: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF	CHILD 5: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF
CHILD 2: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF	CHILD 4: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF	CHILD 6: _____ weeks _____ months <input type="checkbox"/> (999) DK/RF

38. What was the last year you breast fed a child? (FILL IN OR CHECK BOX)

- 19 _____
☐ (99) DK/RF

39. How old were you when you had your first live birth? (FILL IN OR CHECK BOX)

- _____ years of age
☐ (999) DK/RF

40. How old were you when your last pregnancy ended either in a live birth or some other outcome? (FILL IN OR CHECK BOX)

- _____ years of age
☐ (999) DK/RF

41. Have you ever had a pregnancy that ended by miscarriage or abortion? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. How many pregnancies have you had that ended in miscarriage or abortion?

(CHECK ONE BOX)

- ☐ (1) ONE PREGNANCY ☐ (4) FOUR OR MORE PREGNANCIES
- ☐ (2) TWO PREGNANCIES ☐ (9) DK/RF
- ☐ (3) THREE PREGNANCIES

B. How old were you when you had your first pregnancy that ended in miscarriage or abortion? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

C. How old were you when you had your last pregnancy that ended in miscarriage or abortion? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

SECTION 4: INFORMATION ABOUT THE RESPONDENT'S USE OF BIRTH CONTROL42. What one method of contraception (birth control) have you used for the longest time? (CHECK ONE BOX)

- ☐ (01) BIRTH CONTROL PILLS ☐ (08) PARTNER HAS BEEN STERILIZED (VASECTOMY)
- ☐ (02) BIRTH CONTROL INJECTIONS ☐ (09) YOU HAVE BEEN STERILIZED (TUBES TIED)
- ☐ (03) CONDOMS ☐ (10) WITHDRAWAL / RHYTHM METHOD
- ☐ (04) DIAPHRAGM ☐ (97) SOMETHING ELSE: _____
- ☐ (05) SPERMICIDE ☐ (98) NONE OF THESE / NEVER USED CONTRACEPTION
- ☐ (06) IUD ☐ (99) DK/RF
- ☐ (07) CONTRACEPTIVE IMPLANTS (NORPLANT)

43. Have you ever used birth control pills for 6 months or more, either for birth control or any other medical reason? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. How old were you when you first used birth control pills for 6 months or more? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

B. Are you currently taking birth control pills? (CHECK ONE BOX)

- ☐ (1) Yes
- ☐ (2) No ➡➡
- ☐ (9) DK/RF

B1. At what age did you stop taking birth control pills for the last time? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

C. In total, about how long did you take birth control pills, excluding the times when you took a break from taking the pills? (FILL IN + SPECIFY MONTHS/YEARS OR CHECK BOX)

☐ months

☐ years

☐ (999) DK/RF

SECTION 5: INFORMATION ABOUT THE RESPONDENTS HORMONE EXPOSURE

44. Have you reached menopause, either naturally or due to hysterectomy? (Menopause is defined as having no menstrual periods for at least one year not due to medical problem) (CHECK ONE BOX)

- ☐ (1) YES ➡➡
☐ (2) NO
☐ (9) DK/RF

A. How old were you at the time of your last menstrual period? (Do not count periods due to hormone replacement therapy.) (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

B. Why did your periods stop? (CHECK ONE BOX)

☐ (1) SURGERY
 (HYSTERECTOMY /
 OOPHERECTOMY)

☐ (2) NATURAL MENOPAUSE
 (CHANGE OF LIFE)

☐ (3) MEDICATION

☐ (4) RADIATION

☐ (5) OTHER REASON

☐ (9) DK/RF

B1. Did that surgery remove...
 (READ OPTIONS, CHECK ONE BOX)

- ☐ (1) your uterus only?
☐ (2) both ovaries only?
☐ (3) your uterus and 1 or part of 1 ovary?
☐ (4) your uterus and both ovaries?
☐ (5) your uterus (don't know if ovaries were removed)?
☐ (9) DK/RF

B2. Have you ever had a hysterectomy (surgical removal of your uterus)? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
☐ (2) NO
☐ (9) DK/RF

B2a. At what age was this done?
 (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

B3. Have you ever had one or both of your ovaries surgically removed? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
☐ (2) NO
☐ (9) DK/RF

B3a. At what age was this done?
 (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

B3b. How many of your ovaries were removed?
 (FILL IN OR CHECK BOX)

_____ ovaries
☐ (999) DK/RF

45. Have you ever taken any female hormone replacements (such as Premarin, Estrace, Provera, Depoprovera, Estradiol, etc.) to prevent symptoms or problems from the menopause? (CHECK ONE BOX)

☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. How long have you used these female hormone replacements? Would you say you have used them... (READ OPTIONS, CHECK ONE BOX)

- | | |
|--------------------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> (01) less than 1 year (1-11 months) | <input type="checkbox"/> (07) 6 years |
| <input type="checkbox"/> (02) 1 year (12-23 months) | <input type="checkbox"/> (07) 7 years |
| <input type="checkbox"/> (03) 2 years (24-35 months) | <input type="checkbox"/> (08) 8 years |
| <input type="checkbox"/> (04) 3 years (36 - 47 months) | <input type="checkbox"/> (09) 9 years |
| <input type="checkbox"/> (05) 4 years (48 - 59 months) | <input type="checkbox"/> (10) 10 years or more |
| <input type="checkbox"/> (06) 5 years | <input type="checkbox"/> (99) DK/RF |

B. Are you currently taking female hormone replacement medication? (CHECK ONE BOX)

- ☐ (1) YES
☐ (2) NO ➡ ➡
☐ (9) DK/RF

B1. At what age did you stop taking female hormone replacement medication for the last time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

46. Have you ever taken DES (Diethylstilbestrol, used to prevent miscarriage)? (CHECK ONE BOX)

☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. How often did you take DES? Would you say you took it...

(READ OPTIONS, CHECK ONE BOX)

- ☐ (1) ...less than 5 times ever
☐ (2) ...between 5 - 50 times total
☐ (3) ...for less than 5 years and 1 - 10 times a month
☐ (4) ...for less than 5 years and 11 or more times a month
☐ (5) ...for more than 5 years and 1 - 10 times a month
☐ (6) ...for more than 5 years and 11 or more times a month
☐ (9) ...DK/RF

B. At what age did you take DES for the first time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (99) DK/RF

C. At what age did you take DES for the last time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (99) DK/RF

47. Have you ever taken a drug for fertility problems (such as Clomid or Pergonal)? (CHECK ONE BOX)

- ☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. What was the name of the drug you took? (FILL IN OR CHECK BOX)

_____ ☐ (9) DK/RF

B. How often did you take it? Would you say you took it... (CHECK ONE BOX)

- ☐ (1) ...less than 5 times ever
☐ (2) ...between 5 - 50 times total
☐ (3) ...for less than 5 years and 1 - 10 times a month
☐ (4) ...for less than 5 years and 11 or more times a month
☐ (5) ...for more than 5 years and 1 - 10 times a month
☐ (6) ...for more than 5 years and 11 or more times a month
☐ (9) ...DK/RF

C. At what age did you take [DRUG] for the first time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

D. At what age did you take [DRUG] for the last time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

48. Have you ever taken a morning-after pill to prevent pregnancy? (CHECK ONE BOX)

- ☐ (1) YES ➡ ➡
☐ (2) NO
☐ (9) DK/RF

A. How many times, all total, have you taken a morning-after pill? (CHECK ONE BOX)

_____ times
☐ (99) DK/RF

B. At what age did you take a morning-after pill for the first time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

C. At what age did you take a morning-after pill for the last time? (FILL IN OR CHECK BOX)

_____ years of age
☐ (999) DK/RF

49. Have you ever taken thyroid medication (such as Thyroxin)? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. What was the name of the drug you took? (FILL IN OR CHECK BOX)

☐ (9) DK/RF

B. How long have you taken thyroid medication? Would you say you have taken it... (CHECK ONE BOX)

- | | |
|--------------------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> (01) less than 1 year (1-11 months) | <input type="checkbox"/> (07) 6 years |
| <input type="checkbox"/> (02) 1 year (12-23 months) | <input type="checkbox"/> (07) 7 years |
| <input type="checkbox"/> (03) 2 years (24-35 months) | <input type="checkbox"/> (08) 8 years |
| <input type="checkbox"/> (04) 3 years (36 - 47 months) | <input type="checkbox"/> (09) 9 years |
| <input type="checkbox"/> (05) 4 years (48 - 59 months) | <input type="checkbox"/> (10) 10 years or more |
| <input type="checkbox"/> (06) 5 years | <input type="checkbox"/> (99) DK/RF |

C. At what age did you take thyroid medication for the first time? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

D. At what age did you take thyroid medication for the last time? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

50. Have you ever taken pills or shots of Cortisone, Prednisone or Medrol? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. How often did you take these? Would you say you took it... (READ OPTIONS, CHECK ONE BOX)

- ☐ (1) ...less than 5 times ever
- ☐ (2) ...between 5 - 50 times total
- ☐ (3) ...for less than 5 years and 1 - 10 times a month
- ☐ (4) ...for less than 5 years and 11 or more times a month
- ☐ (5) ...for more than 5 years and 1 - 10 times a month
- ☐ (6) ...for more than 5 years and 11 or more times a month
- ☐ (9) ...DK/RF

B. At what age did you take these for the first time? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

C. At what age did you take these for the last time? (FILL IN OR CHECK BOX)

_____ years of age

☐ (999) DK/RF

SECTION 6: SOME ADDITIONAL INFORMATION ABOUT THE RESPONDENT

51. The next questions will be about the number of blood relatives you have.

A. How many full or half brothers do you have? (Brothers is defined as males born to your biological mother or father.) (FILL IN OR CHECK ONE BOX) _____ brothers
☐ (99) DK/RF

B. How many full or half sisters do you have? (Sisters is defined as females born to your biological mother or father.) (FILL IN OR CHECK ONE BOX) _____ sisters
☐ (99) DK/RF

C. How many uncles do you have? (Uncles is defined as full or half brothers of your biological mother or father.) (FILL IN OR CHECK ONE BOX) _____ uncles
☐ (99) DK/RF

D. How many aunts do you have? (Aunts is defined as full or half sisters of your biological mother or father.) (FILL IN OR CHECK ONE BOX) _____ aunts
☐ (99) DK/RF

52. Have any of your blood relatives (including mother, father, brothers, sisters, aunts, uncles, first cousins, grandparents and children) ever had any type of cancer? (CHECK ONE BOX)

- ☐ (1) YES ➡➡
- ☐ (2) NO
- ☐ (9) DK/RF

A. For each blood relative who had cancer, please tell me their relationship to you, the type of cancer they had (what part of the body the cancer began in) and how old they were at the time of their cancer diagnosis. (FILL IN OR CHECK ONE BOX)

PERSON'S RELATIONSHIP TO RESPONDENT	TYPE OF CANCER (OR PART OF BODY WHERE BEGUN)	AGE AT DIAGNOSIS
1. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF
2. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF
3. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF
4. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF
5. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF
6. _____ <input type="checkbox"/> (9) DK/RF	_____ <input type="checkbox"/> (9) DK/RF	_____ years <input type="checkbox"/> (999) DK/RF

53. We are interested in any contact you may have had with certain substances and appliances in work or non-work related activities. You may have come in contact with these because of your job or the location of one or more of your homes. You may also have come in contact with these because you have used these in your job, home or hobbies.

Have you ever had contact, for 6 months or longer, with...	(CHECK ONE BOX)	A. Was the contact you had with this at work, at home or both at work and home. (CHECK ONE BOX)	B. For how many years were you in contact with this? (FILL IN OR CHECK BOX)	SHOW CARD 2 C. Which of the following best describes your contact with this? Would you say you had/have... (1) Regular, low contact (2) Occasional, low contact (3) Regular, moderate contact (4) Occasional, moderate contact (5) Regular, high contact (6) Occasional, high contact (9) DK/RF
...paints, lacquers or stains?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...hair dyes or tints?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...hair spray?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...fabric dyes?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...inks?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...wood-dust or saw dust?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...cotton or other textile fibers or dust?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...insecticides or garden sprays?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...petrochemical plant emissions?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)

Have you ever had contact, for 6 months or longer, with...	(CHECK ONE BOX)	A. Was the contact you had with this at work, at home or both at work and home. (CHECK ONE BOX)	B. For how many years were you in contact with this? (FILL IN OR CHECK BOX)	C. Which of the following best describes your contact with this? Would you say you had/have... (1) Regular, low contact (2) Occasional, low contact (3) Regular, moderate contact (4) Occasional, moderate contact (5) Regular, high contact (6) Occasional, high contact (9) DK/RF
...grain elevator dust?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...electric blankets?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...electrically heated water beds?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...electric mattress pads?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...electric heating pads?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a heater on at night while sleeping?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a light on in the room, most of the night, while sleeping?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a color Video Display Terminal (VDT) Monitor?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a monochrome (black/ white/ gray) Video Display Terminal (VDT) Monitor?	<input type="checkbox"/> (1) YES ➡ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)

Have you ever had contact, for 6 months or longer, with...	(CHECK ONE BOX)	A. Was the contact you had with this at work, at home or both at work and home. (CHECK ONE BOX)	B. For how many years were you in contact with this? (FILL IN OR CHECK BOX)	C. Which of the following best describes your contact with this? Would you say you had/have... (1) Regular, low contact (2) Occasional, low contact (3) Regular, moderate contact (4) Occasional, moderate contact (5) Regular, high contact (6) Occasional, high contact (9) DK/RF
...a liquid screen Video Display Terminal (VDT) Monitor?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...an electric typewriter?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a photocopy machine?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...an overhead projector?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a slide projector?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...electrical power tools such as for wood work?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...an electric sewing machine?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a portable electric heater?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a HAM radio?	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)
...a source of ionizing radiation? (describe)	<input type="checkbox"/> (1) YES ➔ <input type="checkbox"/> (2) NO <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (1) WORK <input type="checkbox"/> (2) HOME <input type="checkbox"/> (3) BOTH <input type="checkbox"/> (9) DK/RF	<input type="checkbox"/> (99-99) DK/RF	(FILL IN NUMBER FROM ABOVE)

The next two questions are about your exercise habits in high school, when you were 18 - 22 years of age, and in the past 3 years. To answer these questions, you will need to estimate the average amount of time you spent each week and the average number of months each year that you spent in these activities.

54. How often did you participate in **strenuous** exercise activities or sports such as swimming laps, aerobics, calisthenics, running, jogging, basketball, cycling on hills or racquetball...

	Average time per week SHOW CARD 3									Average months per year SHOW CARD 4					
	none	1-19	20-59	1-1.3	1.4-1.9	2-3	4-6	7-10	11 +	0	1-3	4-6	7-9	10-12	DK/RF
	(01)	MIN (02)	MIN (03)	HRS (04)	HRS (05)	HRS (06)	HRS (07)	HRS (08)	HRS (09)	MO (1)	MO (2)	MO (3)	MO (4)	MO (5)	(9)
...during high school? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...between ages 18 and 22? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...in the past 3 years? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

55. How often did you participate in **moderate** exercise activities or sports such as cycling on level streets, brisk walking, golf, volleyball, recreational tennis or softball...

	Average time per week SHOW CARD 3									Average months per year SHOW CARD 4					
	none	1-19	20-59	1-1.3	1.4-1.9	2-3	4-6	7-10	11 +	0	1-3	4-6	7-9	10-12	DK/RF
	(01)	MIN (02)	MIN (03)	HRS (04)	HRS (05)	HRS (06)	HRS (07)	HRS (08)	HRS (09)	MO (1)	MO (2)	MO (3)	MO (4)	MO (5)	(9)
...during high school? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...between ages 18 and 22? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...in the past 3 years? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

56. In the past year, how many hours per day did you spend in each of the following **non-strenuous** activities?

Average hours per day SHOW CARD 5							
NONE (1)	1 OR LESS (2)	1 - 2 (3)	3 - 4 (4)	5 - 6 (5)	7 - 9 (6)	10 OR MORE (7)	DK/RF (9)
...casual walking? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...sitting at work? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...sitting in a car or bus (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...sitting at home? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...sleeping? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

57. When you were [AGE CATEGORY], how did your height compare with other girls your age? Were you much shorter, somewhat shorter, about the same, somewhat taller or much taller?

AGE CATEGORY	MUCH SHORTER (1)	SOME- WHAT SHORTER (2)	ABOUT THE SAME (3)	SOME- WHAT TALLER (4)	MUCH TALLER (5)	DK/RF (9)
...9 or 10 (in the 4th or 5th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...12 or 13 (in the 7th or 8th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...15 or 16 (in the 10th or 11th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

58. Compared with other women your age now, would you say you are much shorter, somewhat shorter, about the same, somewhat taller or much taller? (CHECK ONE BOX)

MUCH SHORTER (1)	SOME- WHAT SHORTER (2)	ABOUT THE SAME (3)	SOME- WHAT TALLER (4)	MUCH TALLER (5)	DK/RF (9)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

59. How tall are you without shoes? (FILL IN OR CHECK BOX) _____ FEET, _____ INCHES ☐ (99) DK/RF

Now I have a few general questions about your weight.

60. When you were [AGE CATEGORY], how did your weight compare with other girls your age? Were you much thinner, somewhat thinner, about the same, somewhat heavier or much heavier?

	MUCH THINNER	SOME- WHAT THINNER	ABOUT THE SAME	SOME- WHAT HEAVIER	MUCH HEAVIER	DK/RF
	(1)	(2)	(3)	(4)	(5)	(9)
...9 or 10 (in the 4th or 5th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...12 or 13 (in the 7th or 8th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...15 or 16 (in the 10th or 11th grade)? (CHECK ONE BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

61. Compared with other women your age now, would you say you are much thinner, somewhat thinner, about the same, somewhat heavier or much heavier? (CHECK ONE BOX)

MUCH THINNER	SOME- WHAT THINNER	ABOUT THE SAME	SOME- WHAT HEAVIER	MUCH HEAVIER	DK/RF
(1)	(2)	(3)	(4)	(5)	(9)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

62. How much did you weigh...

...when you were 20 (not counting pregnancy weight)? (FILL IN OR CHECK BOX) pounds
☐ (999) DK/RF

...at about this time last year (not counting pregnancy weight)? (FILL IN OR CHECK BOX) pounds
☐ (999) DK/RF

63. What has been your usual adult weight? (FILL IN OR CHECK BOX) pounds
☐ (999) DK/RF

64. What is the most you have ever weighed since you were 20 years old? (Do not count any times you were pregnant, nursing, or during the six months after a pregnancy? (FILL IN OR CHECK BOX)

..... pounds
☐ (999) DK/RF

65. When you gain weight, where on your body do you mainly tend to add the weight? (CHECK ONE BOX)

☐ (1) AROUND THE CHEST AND SHOULDERS

☐ (5) OTHER: _____

☐ (2) AROUND THE WAIST OR STOMACH

☐ (6) NA/DON'T GAIN WEIGHT

☐ (3) AROUND THE HIPS AND THIGHS

☐ (9) DK/RF

☐ (4) EQUALLY ALL OVER

66. Since you were 18 years old, have you ever lost or gained more than 20 pounds, because of purposeful dieting? Please do not count the times you gained or lost weight because of pregnancy. (CHECK ONE BOX)

- ☐ (1) YES ➡
☐ (2) NO
☐ (9) DK/RF

A. Not counting after a pregnancy, how many times since you were age 18 have you lost 20 pounds or more and then later gained it back?
 (FILL IN OR CHECK BOX)

_____ times
☐ (99) DK/RF

67. If you compared your food intake at age 20 with your usual food intake over the last 12 months, ignoring any recent changes, would you say at age 20 you ate... (CHECK ONE BOX)

MUCH LESS	SOME- WHAT LESS	ABOUT THE SAME	SOME- WHAT MORE	MUCH MORE	DK/RF
(1)	(2)	(3)	(4)	(5)	(9)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

68. Not counting any times you were pregnant or nursing, what has been your usual bra size over your adult life? (FILL IN OR CHECK BOX)

____ - ____ ☐ (99-99) DK/RF
 Number Letter(s)

We are almost done, just a few more questions.

69. Which of the following best describes your yearly household income? (READ OPTIONS, CHECK ONE BOX)

- | | |
|-----------------------------------------------------------|-------------------------------------------------------------|
| <input type="checkbox"/> (1) less than \$10,000 per year | <input type="checkbox"/> (5) \$75,000 - \$99,999 per year |
| <input type="checkbox"/> (2) \$10,000 - \$19,999 per year | <input type="checkbox"/> (6) \$100,000 - \$149,999 per year |
| <input type="checkbox"/> (3) \$20,000 - \$49,999 per year | <input type="checkbox"/> (7) \$150,000 or more per year |
| <input type="checkbox"/> (4) \$50,000 - \$74,999 per year | <input type="checkbox"/> (9) DK/RF |

70. How many people are supported by this income? (FILL IN NUMBER OR CHECK BOX) _____ people
☐ (99) DK/RF

71. Is there anything I did not ask you about that you would like to add? (WRITE IN RESPONSE)

Thank you for completing our survey. Your answers will be very helpful in our study of benign and malignant breast tumors in women.

Time Ended: _____:_____ ☐ am ☐ pm

INTERVIEWER ASSESSMENT: Complete this section as soon as possible after leaving the respondent.

A. The respondent's cooperation was... (CHECK ONE BOX)

- ☐ (1) Very good
☐ (2) Good
☐ (2) Fair
☐ (3) Poor

B. The quality of the interview is: (CHECK ONE BOX FOR EACH SECTION)

	Unsatisfactory (1)	Questionable (2)	Generally reliable (3)	High quality (4)
1. Background info.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Medical history.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Reproductive hist.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Use of birth control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Hormone exp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Additional info.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. The overall quality of this interview is... (CHECK ONE BOX)

- ☐ (1) Unsatisfactory
☐ (2) Questionable
☐ (2) Generally reliable
☐ (3) High quality

D. The reason(s) for unsatisfactory or questionable quality of information (was/were) because the respondent... (CHECK ALL THAT APPLY)

- ☐ (01) Did not know enough information regarding the topic
☐ (02) Did not want to be more specific
☐ (03) Was bored or uninterested
☐ (04) Was upset, depressed or angry
☐ (05) Had poor hearing or speech
☐ (06) Was confused or distracted by frequent interruptions
☐ (07) Was inhibited by others around her
☐ (08) Was embarrassed by the subject matter
☐ (09) Was emotionally unstable
☐ (10) Was physically ill
☐ (11) Other: _____
☐ (99) DK

E. Comments:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Appendix 3 Copy of letter to DOD requesting a no-cost
extension



September 26, 1995

Ms. Dana Herndon
Grant Officer
Department of the Army
U.S. Army Medical Research Acquisition Activity
Attn: MCMR-RMA-RD
Fort Detrick
Frederick, MD 21702-5014

Re: Measurements of Dioxin, PCB and Organochlorine Levels in Breast Adipose
Tissue from Women With and Without Breast Cancer (AIBS #2382)
Grant No. DAMD17-94-J-4429, Myrto Petreas, Ph.D., Principal Investigator
(CPHF #448A)

Dear Ms. Herndon:

The California Public Health Foundation wishes to extend the final budget period of the above noted grant until September 1997.

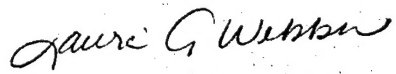
Our study of xenobiotics and breast cancer started in September 1994 with the recruitment and training of field personnel. A custom-made questionnaire was then developed for this study and tested in a pilot phase (October - December 1994), before reaching its final, current form. After the recruitment, interview and surgical procedures on the first five patients (out of a total 100 required), Dr. Jeffrey (the surgeon co-investigator) went on maternity leave. This leave was extended from the originally planned four months to eleven months. As a result, the pace of the study has slowed down dramatically, with only seven additional patients included in the study since her leave. Dr. Jeffrey will resume her full time position at Stanford Medical Hospital on January 2, 1996, at which time we expect to recruit five to ten patients per month, as originally planned.

We are requesting a one-year, no-cost extension of our grant. Such an extension will allow us to complete the study and address all specific objectives, as detailed in our proposal. Our tools and mechanisms have been successfully tested and should guarantee a smooth process as soon as we resume the study on a full time basis.

As you know, only salaries for field personnel have been spent during the first year. Expenses for laboratory analyses (chemist's salary, laboratory supplies, instrument maintenance and repair, etc.) as well as travel expenses have not been incurred. We anticipate such expenses in the second and third (if extended) year of the study.

If you have questions, or require further information, please do not hesitate to contact me.
Your support of this project is greatly appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read "Laura G. Webber".

Laura G. Webber
Grants and Contracts Specialist

cc: M. Petreas
#448A

h:\\nocost.448



STANFORD UNIVERSITY SCHOOL OF MEDICINE

Department of Surgery, MSOB X300
Stanford University Medical Center
Stanford, California 94305-5408

STEFANIE S. JEFFREY, M.D., F.A.C.S.
Assistant Professor of Surgery
Division of Surgical Oncology

Phone (415) 723-4617
FAX (415) 725-3918

September 25, 1995

Myrto Petreas, Ph.D., M.P.H.
Hazardous Materials Laboratory
California Department of Toxic Substances Control
2151 Berkeley Way, Room 515
Berkeley, CA 94704

Dear Dr. Petreas,

I support your efforts to obtain a no-cost extension of our grant from the Department of Defense. I am providing you with the facts regarding my current leave.

In February 1995 I went on maternity leave. My original plans were to return to full time work at Stanford University Medical Center by July 1995. For a number of reasons I extended my leave to the end of the year and I will be back, full time, on January 2nd, 1996.

Given the number of breast cancer patients I see and the overwhelming interest in patients to participate in the study, I believe that upon my return we will be able to recruit 8 to 12 eligible patients per month. At this rate, we should have an adequate patient pool by the end of 1996.

Sincerely,

A handwritten signature in cursive script, reading "Stefanie Jeffrey".

Stefanie S. Jeffrey, M.D.
Assistant Professor of Surgery

Appendix 4 Budget expenditures



U.S. ARMY MEDICAL RESEARCH ACQUISITION
ACTIVITY, ATTN: SGRD-RMA-RG
FORT DETRICK
FREDERICK, MD 21702-5014

INVOICE: **003627**
DATE : 09/07/95
TERMS : DUE UPON RECEIPT

GRANT NO : DAMD17-94-J-4429
GRANT TITLE : DIOXINS & BREAST CANCER - Dept of Army
GRANT PERIOD : 09/01/94 - 09/30/96
FUNDING PERIOD : 09/01/94 - 08/31/95
FUND CODE : 448A
CURRENT PERIOD : 07/01/95 - 07/31/95

TITLE	BUDGET	EXPENDITURES THIS PERIOD	EXPENDITURES TO DATE	BALANCE

PERSONNEL				
SALARIES (see attached)	\$42,050.00	\$254.65	\$2,478.73	\$39,571.27
FRINGE BENEFITS	\$10,933.00	\$36.13	\$388.54	\$10,544.46

TOTAL PERSONNEL	\$52,983.00	\$290.78	\$2,867.27	\$50,115.73

OPERATING EXPENSES				
OTHER EXPENSES	\$2,850.00	\$0.00	\$680.00	\$2,170.00
MAINTENANCE	\$2,000.00	\$0.00	\$0.00	\$2,000.00
OCCUPANCY	\$418.00	\$0.00	\$0.00	\$418.00
TRAVEL	\$2,140.00	\$0.00	\$0.00	\$2,140.00

TOTAL OPERATING EXPENSES	\$7,408.00	\$0.00	\$680.00	\$6,728.00

OTHER EXPENSES				
EQUIPMENT	\$0.00	\$0.00	\$0.00	\$0.00
SUBCONTRACTS	\$0.00	\$0.00	\$0.00	\$0.00

TOTAL OTHER EXPENSES	\$0.00	\$0.00	\$0.00	\$0.00

TOTAL DIRECT COST	\$60,391.00	\$290.78	\$3,547.27	\$56,843.73
INDIRECT @ 19.5%	\$13,165.00	\$56.70	\$672.34	\$12,492.66

TOTAL EXPENDITURES	\$73,556.00	\$347.48	\$4,219.61	\$69,336.39

WITHDRAWN FROM ADVANCE (see attached)	\$92,294.00	\$347.48	\$4,219.61	\$88,074.39
AMOUNTS PREVIOUSLY BILLED			(\$0.00)	

NET INVOICE		\$0.00		
		=====		

PAULA TAUBMAN
DEPUTY DIRECTOR